

Application Serial No. 10/657,716
Response filed December 17, 2008
Reply to Office Action mailed October 30, 2008

REMARKS

Claims 1-13 are pending and under consideration. Reconsideration is requested based on the following remarks.

Response to Arguments:

The Applicants appreciate the consideration given to their arguments, and the new grounds of rejection. Further reconsideration is thus requested.

Claim Rejections - 35 U.S.C. § 103:

Claims 1 and 3-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the section of the subject application entitled "Background of the Invention" (hereinafter "the Background"), to which the Office Action refers as "Admitted Prior Art," in view of U.S. Patent No. 6,381,038 to Endo *et al.* (hereinafter "Endo") and US Patent Application Publication No. 2002/0001373 to Sakurai (hereinafter "Sakurai"). The rejection is traversed. Reconsideration is earnestly solicited.

There are three phases in the timing of connecting fax machines:

In a first phase, a signaling connection is set up. This phase is completed at the time t5, as shown in Fig. 1A. Basically, the signaling connection will exchange the status of components, such as "connected," "busy," and so on.

In a second phase, a payload connection is set up. This phase is completed at time t13, as shown in Fig. 1B. An established payload connection is a prerequisite for an exchange of payload data, such as voice as in an ordinary phone call, or, in our case, an exchange of "fax beep tones."

Finally, in a third phase, a transmission-controlling connection is set up between the two faxes according to the fax protocol. This phase starts at time t14, as shown in Fig. 1B.

The underlying problem solved by the claimed invention can be described as follows: after a successful connection setup of a signaling level has come to an end, the receiving fax machine, i.e. second fax machine FG2, is "going off-hook." This happens upon the arrival of a "connect" message, which is not shown, and which is sent from the second fax machine FG2 to the second network unit NU2. The "connect" message clearly reports "going off-hook" of the

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second fax machine FG2.

The point in time when the second fax machine goes off hook is *indefinable* and happens at a time that is earlier than the time t10. The fax machine FG2, which is in off-hook state is, as a consequence, starting to send a Called Terminal Identification (CED) signal. CED signals are sent by a called fax machine in order to indicate that the fax machine is in the transmission-controlling phase. The start of the sending of the CED signal may be (according to the ITU-T standard T. 30) delayed by a definable period of time. Thus, the receiving fax is already in a condition for a transmission-controlling connection, i.e. for establishing the fax connection but the sending fax machine is not yet ready.

It is possible to compensate for this problem by adjusting the delay, i.e. the period of time that lapses between "going off-hook" of the second fax machine FG2 and sending of the CED signals. Since the procedural steps that follow require a considerable amount of time, i.e. approximately 7 seconds, before the first fax machine FG1 changes over to the transmission-controlling connection mode, the delay in sending the CED would be adjusted to that time.

The problem inherent in the delay in sending the CED was recognized by Endo. The calling and called facsimile machines of Endo, however, increase their timer values using the selected timer value change information in response to a delay. In particular, as described in the Abstract:

The calling and called facsimile machines increase their timer values using the selected timer value change information. Accordingly, even if a communication delay is caused in the communication network, the retransmission of the transmitted signal can be avoided.

Sakurai was also aware of the problem. However, as is apparent by paragraph [0012], Sakurai's solution is based on a conventional delay of 75 plus/-20 ms comparable to the suggested, however larger, period of seven seconds discussed above. Hence, neither the seven second delay discussed above, nor Sakurai, are able to solve the problem of the CED not being transmitted in a manner that can be synchronized with control messages exchanged by the fax gateways and other components.

According to the claimed invention, on the other hand, a start is not made at the receiving side in setting up the connection between the receiving second fax machine FG2 and the second data gateway DG2 until setting up of a connection between the first data gateway DG1 of the first fax machine FG1 has been fully concluded at the time t16, which is initiated by arrival

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of the message 144 the second data gateway DG2. At the time when the second data gateway DG2, which is itself behaving like a fax machine, sends its initializing data, namely the "Calling Tone" (CNG) signal, the arrangements required according to the T.30 standard for the fax connection setup that is to be established are consequently superimposed on the CNG signal, because the recipient fax has already sent the CID signal at this time and begun sending its configuration data. The super imposition cannot be securely prevented by the above discussed seven second delay of the CED signal following "going off-hook" because the arrival time of the CNG message cannot be specified or predicted on a defined basis.

According to the claimed invention, however, when a fax connection is to be established between the calling first fax machine and a called second fax machine, a payload connection is set up between the gateways. After a successful set up with a payload connection, a fax connection is set up (the recited "transmission-controlling connection") between the first fax machine in the first data gateway, and between the second fax machine in the second data gateway. Finally, *after having* the transmission-controlling connections between the fax machines in its respective data gateways *successfully established*, a control message containing identification information of the sending first fax machine FG1 is transmitted from the first data gateway to the second data gateway. The second and third clauses of claim 1, in particular, recite:

Terminating sent data of the first fax machine at a first data gateway belonging to the first communication facility.

And:

Terminating sent data of the second fax machine at a second data gateway belonging to the second communication facility.

The recited "terminating" is a term used in the technical world for a communication between two communication end points in which the sent data are not conveyed but in which the communication is "terminated" or "completed" at the communication end points. A description of this function of the data gateway as communication end point may be found at paragraph [0015] of the specification.

The fourth clause of claim 1, moreover, recites:

Setting up a payload data connection between the first and second data gateways.

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Thus, a user data connection (payload connection) is established between the two data gateways. Therein, a user data connection means a voice channel appropriate for the transmission of transmission controlling T.30 signals.

Subsequently, a transmission controlling connection is established between the calling and the answering fax machines and their respective assigned data gateways. A transmission controlling connection means again an exchange of T.30 signals. The transmission-controlling connection between the second fax machine and second data gateway is preferably set up synchronously with the transmission-controlling connection between the first fax machine and the first data gateway, as recited in claim 2. Time delays, however, could arise since this operation is not synchronized, and the timing could therefore depend on technical deviations.

The final clause of claim 1 recites:

After setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway.

Neither the Background, Endo, nor Sakurai teach, disclose, or suggest “after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway,” as recited in claim 1.

The Office Action acknowledges this deficiency with respect to the Background in section 3, in the first full paragraph at page 5, and attempts to compensate for it by combining the Background with Endo and Sakurai. Endo, however, is not “after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway” either, and thus cannot make up for the deficiencies of either the Background or Sakurai with respect to claim 1. Each of the facsimile machines of Endo, rather, monitors whether the response signal is received from the counterpart facsimile machine within the timer value and, if the response signal is not received within the timer value, retransmits the transmitted signal. In particular, as described in the Abstract:

Using the timer value, each of the facsimile machines monitors whether the response signal is received from the counterpart facsimile machine within the timer value. If the response signal is not received within the timer value, retransmission of the transmitted signal is required.

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Thus, Endo has no use for "after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of a sending fax machine from the first data gateway to the second data gateway," as recited in claim 1.

Endo, moreover, appears to have at least noticed the problem solved by the claimed application, but approached a solution by having the calling and called facsimile machines increase their timer values using the selected timer value change information, as discussed above, instead of "after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway," as recited in claim 1. In particular, as also described in the Abstract:

The called facsimile machine transmits all timer value change information for increasing the timer value to the calling facsimile machine. The calling facsimile machine selects the optimum timer value change information within the range of the timer value change information received from the called facsimile machine, and transmits the selected timer value change information to the called facsimile machine. The calling and called facsimile machines increase their timer values using the selected timer value change information.

Thus, Endo is not "after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of a sending fax machine from the first data gateway to the second data gateway" either, and cannot make up for the deficiencies of the Background with respect to claim 1.

In Endo, moreover, the calling facsimile machine judges that a transmission failure has occurred and *retransmits* the DCS or NSS signal and then the TCF signal unless the CFR signal is received within 3 seconds from the called facsimile machine. In particular, as described at column 12, lines 21-26:

For example, upon transmitting the TCF signal, the calling facsimile machine sets a T4 timer value (3 seconds). Then, unless the CFR signal is received within 3 seconds from the called facsimile machine, the calling facsimile machine judges that a transmission failure has occurred, and retransmits the DCS or NSS signal and then the TCF signal.

Since, in Endo, the calling facsimile machine judges that a transmission failure has occurred and retransmits the DCS or NSS signal and then the TCF signal unless the CFR signal is received within 3 seconds from the called facsimile machine, Endo has no need for "after

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setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway,” as recited in claim 1.

In Endo, moreover, if the normal T4 timer value (3 seconds) is set in the timer 55 at step S10, since more than 3 seconds have elapsed after the transmission of the TCF signal in an example of FIG. 7, it is necessary that the facsimile machine 111 *retransmits* the NSS signal and the TCF signal. In particular as described at column 16, lines 11-16:

The facsimile machine 111 receives the CFR signal from the gateway 211. If the normal T4 timer value (3 seconds) is set in the timer 55 at step S10, since more than 3 seconds have elapsed after the transmission of the TCF signal in an example of FIG. 7, it is necessary that the facsimile machine 111 retransmits the NSS signal and the TCF signal.

Since, in Endo, if the normal T4 timer value (3 seconds) is set in the timer 55 at step S10, since more than 3 seconds have elapsed after the transmission of the TCF signal in an example of FIG. 7, it is necessary that the facsimile machine 111 retransmits the NSS signal and the TCF signal, Endo has no need for “after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway,” as recited in claim 1.

In Endo, moreover, the twofold-increased T4 timer value of 6 seconds is set at step S10 and further the CFR signal is received within a lapse of 6 seconds, although after a lapse of 3 seconds, from the transmission of the TCF signal. In particular, as described at column 16, lines 17-23:

However, in the example of FIG. 7, the twofold-increased T4 timer value of 6 seconds is set at step S10 and further the CFR signal is received within a lapse of 6 seconds, although after a lapse of 3 seconds, from the transmission of the TCF signal. Accordingly, the facsimile machine 111 recognizes that the CFR signal is received within the normal response time.

Since, in Endo, the twofold-increased T4 timer value of 6 seconds is set at step S10 and further the CFR signal is received within a lapse of 6 seconds, although after a lapse of 3 seconds, from the transmission of the TCF signal, Endo has no need for “after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway

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to the second data gateway," as recited in, for example, claim 1.

In Endo, moreover, the retransmission of the NSS signal and the TCF signal, which would be otherwise required due to the delay of the CFR signal relative to the TCF signal caused by the foregoing communication delay from the gateway 221 to the gateway 211, is not required so that the delay of the CFR signal relative to the TCF signal can be absorbed. In particular, as described at column 16, lines 24-28:

Thus, the retransmission of the NSS signal and the TCF signal, which would be otherwise required due to the delay of the CFR signal relative to the TCF signal caused by the foregoing communication delay from the gateway 221 to the gateway 211, is not required so that the delay of the CFR signal relative to the TCF signal can be absorbed.

Since, in Endo, the retransmission of the NSS signal and the TCF signal, which would be otherwise required due to the delay of the CFR signal relative to the TCF signal caused by the foregoing communication delay from the gateway 221 to the gateway 211, is not required so that the delay of the CFR signal relative to the TCF signal can be absorbed, Endo has no need for "after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway," as recited in claim 1.

Sakurai, for its part, transmits a preamble signal 432 following a no-signal state 450 of 75.+-20 ms after transmitting the CED signal 431, as discussed above. In particular, as described in paragraph [0012]:

After transmitting the CED signal 431, the incoming call side G3 facsimile apparatus 2202 transmits a preamble signal 432 following a no-signal state 450 of 75.+-20 ms. The incoming gateway apparatus 1202 transmits preamble data 422 by an IFP packet.

Since Sakurai transmits a preamble signal 432 following a no-signal state 450 of 75.+-20 ms after transmitting the CED signal 431, Sakurai is not "after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway" either, and thus cannot make up for the deficiencies of either the Background or Endo with respect to claim 1.

Sakurai, moreover, hopes that a transmission delay occurs which is generally longer than that occurring in a telephone switched network, as discussed above. In particular, as described

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further in paragraph [0012]:

At this point, since an IP network 200 is provided between the incoming side gateway apparatus 1202 and the outgoing side gateway apparatus 1201, transmission delay occurs which is generally longer than that occurring in a telephone switched network. When a delayed time of the IP network at a time t is assumed to be $Td(t)$ ms, it takes $Td(t)$ ms for the IFP packet of the preamble data 422 to reach the outgoing side gateway apparatus 1201.

Since Sakurai hopes that a transmission delay occurs which is generally longer than that occurring in a telephone switched network, Sakurai is not “after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending first fax machine from the first data gateway to the second data gateway” either, and thus cannot make up for the deficiencies of either the Background are Endo with respect to claim 1.

Therefore, even if the Background, Endo and Sakurai were combined, as proposed in the Office Action, the claimed invention would not result.

The Office Action, nevertheless, asserts in section 3, in the first full paragraph at page 7, that:

Therefore, in view of Sakurai `373, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of the sending fax machine from the first data gateway to the second data gateway, incorporated in the device of the admitted prior art, as modified by the features of Endo `038, in order to connect the facsimile apparatus to the respective gateway for the system to know the devices transmission or receipt state (as stated in Sakurai `373 paragraph [0047]).

Since each of the facsimile machines of Endo, however, monitors whether the response signal is received from the counterpart facsimile machine within the timer value, as discussed above, Endo already *knows* the device's transmission or receipt state. Endo is complete in itself. It would not be necessary for Endo to *also* transmit “identification information of the sending first fax machine from the first data gateway to the second data gateway” “after setting up the transmission-controlling connection between the second fax machine and the second gateway,” since Endo already *knows* the device's transmission or receipt state. It is submitted, therefore, the persons of ordinary skill in the art who read the references for all they contained would not have modified the Background as proposed in the Office Action, since it would not have been

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necessary. Claim 1 is submitted to be allowable. Withdrawal of the rejection of claim 1 is earnestly solicited.

Claims 3-8 depend from claim 1 and add additional distinguishing elements. Claims 3-8 are thus also submitted to be allowable. Withdrawal of the rejection of claims 3-8 is earnestly solicited.

Claims 2 and 9-13:

Claims 2 and 9-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Background, Endo and Sakurai in view of U.S. Patent No. 6,480,585 to Johnson (hereinafter "Johnson"). The rejection is traversed to the extent it would apply to the claims as amended. Reconsideration is earnestly solicited.

Claims 2 and 9-13 depend from claim 1 and add further distinguishing elements. Neither the Background, Endo, nor Sakurai teach, disclose, or suggest "after setting up the transmission-controlling connection between the second fax machine and the second gateway, transmitting identification information of a sending fax machine from the first data gateway to the second data gateway," as discussed above with respect to the rejection of claim 1. Johnson does not either, and thus cannot make up for the deficiencies of either the Background of Endo with respect to claims 2 or 9-13.

Claims 2 and 9-13 are thus also submitted to be allowable. Withdrawal of the rejection of claims 2 and 9-13 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all of claims 1-13 are allowable over the cited references. Allowance of all claims 1-13 and of this entire application is therefore respectfully requested.

Finally, if there are any formal matters remaining after this response, the Examiner is invited to telephone the undersigned to attend to these matters.

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If there are any additional fees associated with filing this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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